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Complete Table of Contents on Advertising Page 4

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VOLUME 51 NUMBER 7

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VOLUME 51 JULY, 1944 NUMBER 7

Common Endocrine Problems of Children*

Reported by RALPH L. GORRELL, M.D., *Brooklyn, New York*

ENDOCRINE processes in children resemble those of adults except for modification of growth and sexual maturity.

Delayed Growth (Dwarfism)

Dwarfism: The child is below normal stature for his age.

Infantilism: Delayed sexual maturity; no mental changes; because boys have external genitalia, the diagnosis may be made in the first few years of life; in girls, the diagnosis is not usually made until the age of 9 or 10.

Growth factors:

Inherent ability to grow { Race / Family }
Balanced diet
Ability to utilize materials for growth

Certain families are short; certain races are short. The child must have proper amounts of protein, fat, carbohydrate, minerals and vitamins, and the ability to use these materials, or nutritional dwarfism appears.

Treatment for delayed growth:

Thyroid extract
Balanced diet
Thiamine (vitamin B_1)
Iron

Causes of dwarfism:

1. Psychic
   a. Anorexia nervosa, etc.
2. Central nervous system trauma
3. Congenital dwarfism without endocrine cause
4. Congenital dwarfism with endocrine cause
5. Endocrine dwarfism
6. Toxic dwarfism
7. Disease of organs
   a. Renal dwarfism, etc .
8. Dwarfism

1. *Anorexia nervosa:* This condition is usually seen only in girls. The patient refuses food over prolonged periods until emaciation appears. Amenorrhea, at first psychic and later organic, appears. The basal metabolic rate varies from -23 to -56. This is *not* a glandular condition, and must be differentiated from pituitary cachexia (Simmond's disease). Growth and development, including sexual development, stop.

Treatment: If such patients are fed properly, through a duodenal tube if necessary, they will gain weight without any endocrine therapy. The physician must give firm assurance that the diagnosis is correct, and handle the case firmly with insistence on feeding. Pituitary gonadotrophins in the urine are normal, thus ruling out pituitary disease. Glucose tolerance may be raised or lowered. These patients never make any complaint; usually they are brought in by a parent or relative.

2. *Central nervous system trauma:* severe brain damage early in life is usually followed by mental retardation and physical signs of central nervous system injury.

3. *Congenital dwarfism without endocrine factors* may result in a clinical picture resembling cretinism; the youngsters are cheerful but stupid; most of them have noticeable nasal mucous and nasal obstruction; few live to adulthood, because of the development of pneumonia. Multiple congenital defects, such as web fingers, are usually found.

Treatment: They may be taught simple tasks to do around the home. Thyroid extract may be of value. If there

*Salient points, on the conditions encountered by the general practitioner, abstracted from a complete lecture given to the Buffalo Academy of Medicine, Feb. 16, 1944 (by R.L.G.)

are other children in the family, they should be spared the stigma by placing the child in an institution.

Congenital dwarfism without endocrine factors results in many rare types of dwarfism (dyschondroplasia, Morquio's disease, Lawrence-Moon-Biedl syndrome).

4. *Ovarian dwarfism* (Turner's syndrome) is associated with anomalies elsewhere, such as strabismus, anomalies of the vertebrae. These patients excrete much pituitary gonadotrophic hormone, as shown by rat injection tests, so that the endocrine failure lies in the ovaries. Such patients grow to 52 to 58 inches, without the usual spurt which occurs at puberty and amenorrhea is common. Stilbestrol is a very effective treatment.

Endocrine Dwarfism

There are three growth hormones, *all* of which are needed for growth:

(a) The pituitary growth hormone
(b) Thyroid hormone
(c) Androgen

The *pituitary growth hormone* is responsible for the child's growth. Excess amounts cause gigantism, when the patient is a child, or acromegaly, when an adult. Other growth hormones, when given in excess, do not cause overgrowth. A.P.L. (anterior pituitary like fraction) or Antuitrin-S are commercial examples of pituitary hormone.

Thyroid hormone is needed for cell metabolism and other growth stimuli. When needed by a patient, its administration is followed by rapid growth. Excess amounts cause precocious maturity and rapid growth, but not excess growth.

Androgen is secreted normally in both sexes by the adrenal cortex, and by the testes in the male. The secretion increases at puberty which may account for the spurt in growth at puberty. In girls, large doses cannot be used in treatment, or masculinization may temporarily appear. Testosterone propionate by injection, or methyl testosterone orally, may be used.

In Brissaud's dwarfism, all 3 factors are lacking and should be given (500 international units of A.P.L. three times weekly, thyroid extract to tolerance and testosterone by injection or orally, 30 mg. twice weekly).

Girls at the age of 8 should begin to have nodules of breast tissue. The finding of an "infantile" uterus is *not* diagnostic.

Adiposogenital Dystrophy (Frölich's Syndrome)

Do not confuse the fat or obese child with the adiposogenital syndrome. In boys, the genitalia grow relatively little from the age of one year up to 10 years, and the hiding of the genitalia by rolls of fat make them appear even smaller. For a definite index, measure the length of the penis from the pubis to the tip.

In the true adiposogenital syndrome, one finds; "Peaches and cream," smooth, fine skin; fine teeth, fat breasts and buttocks; frequently, knock-knees; less initiative and less fighting (among males); may be taller than average.

Treatment: A.P.L. 500 units three times weekly for 4 months to 1 year results in increased vigor and better figure. *The diet is the chief aid.* Thyroid extract may be given to tolerance, but do not depend upon it for weight loss. Benzedrine is of help in weight loss. Stramonium may result in loss of appetite.

Hypothyroidism

Three groups of hypothyroid patients:
cretinism
juvenile hypothyroidism
borderline hypothyroidism

(a) In *cretinism*, there is marked delay in eruption of teeth, the tongue is enlarged and may protrude, the voice sounds like a crow, the belly protrudes and umbilical hernia is frequent. Bone growth is delayed and the epiphyses show retarded x-ray signs (other factors may cause retarded epiphysial age).

(b) *Juvenile hypothyroidism:* coarse hair, lack of energy, poor teeth, obesity may not be present. Therapeutic test: ½ to 3 grains of thyroid, average 1½ grains, daily.

Diagnostic Chart: Cretinism Versus Mongolian Idiot

	Cretinism	Mongolian
Age detectable	6 months	At birth
Face	Puffy, apathetic	Cheerful, stupid
Mouth	Large tongue, often protruded	Red, fissured tongue
Hair	Dry	Sparse, soft hair
Teeth	Delayed eruption, poor formation	Pegged teeth
Growth	Dwarf	Normal
Hands Feet	Spade	Offset thumb, great toe
Abdomen	Protuberant Constipation	Less marked changes

The cretin usually does not become normal, mentally. Although the physical results of thyroid therapy are often remarkable, one may find that a placcid child has been changed into an irascible one, and the dose of thyroid may need to be reduced until the child behaves more normally. Teeth appear within a

few weeks after thyroid therapy is begun, and the heart size is reduced.

Toxic Dwarfism

Renal, tuberculous and malarial dwarfs occasionally appear. In renal dwarfism, there is a calcium starvation. The kidney can not excrete phosphorus.

Nutritional Dwarfism

Chronic diarrhea, as from sprue or pancreatic disease, causes dwarfism. A markedly deficient diet over a long period of time will result in nutritional dwarfism.

Diabetic dwarfism is not seen commonly if good nutrition is maintained. Infantilism (delayed sexual maturity) should be treated by sex hormones.

Simple Goiter

Simple goiter is thought to be due to work hypertrophy. These colloid goiter patients should be treated with iodized salt and small doses of thyroid extract.

Cryptorchidism

Treatment should begin at age 7 to 8 and is harmless, consisting of thrice weekly injections of A.P.L. hormone in doses of 500 International Units, for several months, until the testicle descends or until overgrowth of the genitalia appears. Surgical repair is necessary if descent does not occur.

Discussion

Dr. Koepfer, Buffalo: In treating girls with testosterone to obtain rapid growth at puberty, one may use 1 mg. of stilbestrol daily to avoid masculinization.

2020 East 93rd St.

The Premarital Medical Consultation*

By MARIE PICHEL WARNER, M.D., B.S., *New York, N. Y.*

PREMARITAL Medical Consultation is an aid to the biologic and emotional adjustments of marriage. Thirty-eight states now require some type of premarital medical examination, varying from a serological test for syphilis and smears for gonorrhea, to a thorough physical and genital examination.

Medical assistance should be given to a couple prematurally, that will aid them in leading a better adjusted, harmonious married life, with opportunity for normal sexual enjoyment. Usually, they require an understanding of the reproductive process, and acceptance of some mutually agreeable scientific medical method for family planning. The advisability of an immediate pregnancy or health advice as to reasons for postponing child bearing are essential to the well-being of the family. It is erroneous and harmful to discourage couples who request premarital advice by dismissing them with such answers as, "Your husband will teach you all you have to know," or "Just rely upon your instinct and Nature will tell you what to do."

The physician can prevent much unnecessary pain and harmful physical and emotional experiences of early marriage by being aware of the type of information required in each case. This demands adequate premarital examination and discussion and knowledge of the present day psychiatric concepts of normal sex behavior and contraceptive technics. When pregnancy is not desirable, instruction in the use of the condom by the male in conjunction with the injection of contraceptive lubricant by the female should be given, or a vaginal diaphragm can and should be fitted premaritally even in virgins, where the hymen permits a one-finger vaginal examination. Defloration is seldom necessary to such fitting or instruction. The couple, individually or together, are given an explanation of male and female genital and reproductive anatomy, physiology and information about coitus and normal sex behavior. I use anatomical pictures and models, (such as Dr. R. L. Dickinson's "Atlas of Human Sex Anatomy").

To demonstrate the premarital problems, I made a clinical analysis of 500 premarital patients followed for from one to seventeen years. Specific information was requested concerning the first sex act, duration and frequency of coitus, meaning of orgasm, difference in reaction time of the male and female, the necessity and propriety of various coital positions and forms of erotic stimulation and difference in responsiveness.

Correction of popular fallacies is needed, e.g., that every virgin must bleed with the first sex act, that simultaneous

* Author's abstract of an article which appeared in *The Medical Woman's Journal*, Dec. 1943. 20 W. 86 St. Paper read before the New York State Medical Society, Hotel Waldorf Astoria, in April, 1942, Section on Gynecology and Obstetrics.

orgasm is necessary for pregnancy to occur, and many others. A list of authentic literature for reference, for both the couple and the physician, is given. Every female is instructed in locating her vaginal orifice, in learning its depth and direction by teaching her to insert a douche tip while on the examination table. Technic of douching, elasticity and type of her hymen, the possibility of bleeding or discomfort, easiest position for coitus should be explained to the female, as well as all technically intimate details which aid in successful consummation. The bride-to-be is instructed in these details while in the lithotomy position on the examining table, and is instructed how far, and in what direction to insert a douche tip. She is actually shown how to douche with warm water in a sitting position.

Medical dilatation of the hymen is only suggested where obstructive hymens or anatomic anomalies exist. 42% of females admitted premarital sex experience. 71% of the grooms admitted to previous sex experience.

The most frequent request was for contraceptive advice. 90% requested this; 9% did not request it and 15 did not require such advice. Other requests were concerned with physical fitness, venereal disease, hereditary defects, fertility, impaired potency, masturbation, sex technics, information about anatomy, physiology and the development of the genital and reproductive systems, normal sexual and marital behavior and hygiene.

Vaginal diaphragms were prescribed for 83%. The majority required sizes 75-80mm. 15% preferred to use condoms and were instructed in their use. 2% asked for and were given information regarding the "safe period." All hoped to be able to bear children as soon as social and financial conditions were optimum, 84 (20%) of the 500 cases reviewed, were non-consummations, none of whom had sought premarital advice. The majority sought advice within two weeks after marriage while others waited for from six months to sixteen years.

The study has shown that for many individuals love and instinct have not proven sufficient to allow for normal and successful consummation of marriage.

Physicians must accept premarital medical counselling as a worthy phase of medical practice.—20 W. 36th St.

Contraceptive Methods Used Premaritally

Method	Number
Condoms	183 (77%)
Coitus interruptus	38 (16%)
Douche	5 (2.5%)
Diaphragm	5 (2.5%)
Rectal coitus	2 (0.8%)
External coitus	2 (0.8%)

Type of Premarital Pelvic Examination

Type	Number
One-finger vaginal	209
Two-finger vaginal	151
Rectal	32
Refused examination	10

Methods of Hymenal Dilations*

Method	Number
Manual dilation by physician in office	9 (7%)
Hospitalization, general anesthesia, surgical hymenectomy	8 (5%)
Dilation in office, local anesthesia	41 (26%)
Dilation in office, no anesthesia, endoscopes and speculum	81 (51%)

*17 patients who required dilation would not permit the procedure. 72 patients were cases of nonconsummation in postmarital brides.

Pelvic Pathology Diagnosed at Time of Premarital Examination

Condition	No. of Cases
Female:	
Fibroid uterus	21
Ovarian cyst	10
Trichomonas vaginalis	40
Cervical polyps	7
Eroded cervix	37
Hernia	1
Adnexitis	7
Pregnant at time of first visit	4
Male:	
Hypospadius	4
Varicocele	4
Enlarged prostate	4
Hernia	1
Hypogenitalism	4

Reasons for Non-consummation

Reason	No. of Cases
Obstructive hymen	46
Painful attempts	16
Ignorance of anatomy	21
Septate hymen	18
Inhibitions	51
Fear	47
Trauma to female	13
Impotence—premature ejaculation	3
Inexperienced male	5
Holding legs straight	11
Faulty premarital advice	2
Anxiety over previous masturbation	4
Disgust	9
Lack of privacy	2

Foolish people can create disasters, but they cannot endure them; wise people do not cause them, but can endure them.—MANLY P. HALL.

Experimental and Clinical Studies on Penicillin

By F. J. von GUTFELD, M.D., *Richmond, Virginia*

IT IS gratifying indeed to comply with the invitation of the editor in writing about penicillin from the standpoint of the laboratory worker as well as from the viewpoint of the physician.

It is planned here to describe some of my laboratory experiments which I performed during the last two years. I finally succeeded in producing, on small scale of course, a crude penicillin which could be used for the treatment of patients.

All my experiments have been performed with the strain of penicillium notatum which had been discovered by A. Fleming in 1928. I am indebted to Dr. A. D. Gardner, Oxford (England) for sending me this culture.

The ultimate objective of the experiments was to produce an efficient, though crude, non-toxic penicillin which could be used for the treatment of patients, as it is known that penicillin yields excellent results in the treatment of certain infectious diseases,—results which can not be obtained with any other drug, sulfonamides included. Furthermore the expert could not doubt that the complicated "mass-production" would not satisfy the needs of our armed forces, even less so of the patients in the civilian population. Therefore it was planned to prepare penicillin for the use of the patients in our hospital as a measure to bridge the period until manufacturing firms could produce enough to satisfy all needs at reasonable costs. (According to press news this goal has been attained recently).

For the cultivation of the mold we used the nutrient medium of Czapek-Dox which contains glucose and mineral salts.

It was not difficult to duplicate the fundamental experiments as described by Fleming, Florey and co-workers, and to obtain a fairly potent solution of crude penicillin. Aware of the fact that the purification of the crude penicillin by repeated extraction with solvents could not be attempted because of technical reasons, I decided to remove the fungus from the crude penicillin in the usual way by filtering through a Seitz filter. This procedure proved unsatisfactory because (1) it diminished the bacteriostatic potency of the penicillin, (2) in some experiments the Seitz filter did not remove the fungus cells entirely (the filtrate showed growth of Penicillium notatum 10 to 14 days after filtration).

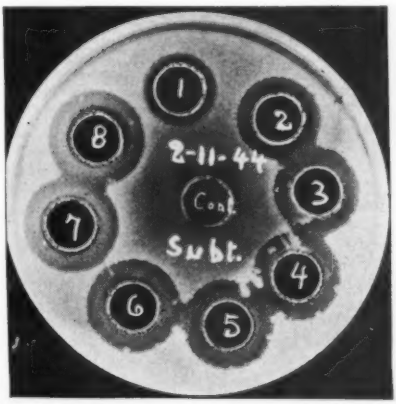

Fig. 1. Experiment of 2-11-1944. A Petri dish containing nutrient agar inoculated with test strain of Bacillus subtilis (poured plate). Nine holes were made with cork bore; Nos. 1 to 8 received 3 drops each of crude penicillin in varied concentrations (1-8; 2-8; 3-8; etc.). Control (center) had 3 drops of distilled water. Holes 1 to 3 are surrounded by a dark area of varied diameter indicating the growth-inhibiting action of penicillin. The relation between penicillin concentration and its bacteriostatic action can be expressed in mathematical terms.

The next step was to add fungicidal substances to the crude penicillin. These substances (1) had to destroy all fungus cells, without diminishing the bacteriostatic potency of the penicillin, (2) must be non-toxic. The addition of alcohol (final concentration 20%) or salicylic acid (0.25%) proved to be satisfactory. The effect of so prepared crude penicillin in local application was "quite remarkable" (personal communication).

Whilst I still tried to improve the aforementioned method, Robinson and Wallace[1] published a new way of ap-

*Department of Bacteriology and Parasitology, Medical College of Virginia, *Richmond, Virginia.*

plying penicillin locally by using dressings which were soaked in a nutrient solution and inoculated with the fungus. It apparently was demonstrated that the living mold did not do any harm to the human tissues. Before it was possible to introduce this method, the following event changed the situation.

In December 1943, a patient developed a severe infection after delivery by cesarean operation. Sulfonamides were of no avail. The obstetrician asked if I could furnish some of my penicillin for intravenous use, as a last resort. After the tests for sterility, pH and potency were performed, the crude penicillin solution was given as an intravenous drip. Following the administration of penicillin, the temperature dropped to normal within a few days, an uneventful recovery followed and the patient went home within 12 days after penicillin had been started.

Animal experiments meanwhile had proved that even repeated intraperitoneal injections of 0.5cc of crude penicillin into white mice of 20 g weight were entirely innocuous.

The application of the crude penicillin by intravenous drip produced in some patients a rise in temperature; otherwise no untoward by-effects have been observed. It is doubtful, however, whether this by-effect is due to the penicillin itself, since some of these patients had developed chills and fever on previous occasions following the intravenous administration of glucose solution.

The question of dosage is especially difficult. As is known the "Oxford-unit" is defined (a) as the amount of penicillin which inhibits the growth of Staphylococcus aureus in 50 cc. of meat extract broth, (b) as the amount of penicillin which produces a zone of inhibition 24 mm in diameter in the cup plate method. In (a) and (b) a special strain of Staphylococcus aureus has to be used. My experiments to define the potency of my crude penicillin have demonstrated that in the cup plate method several factors have to be observed. Besides the two methods yield different results. It is not the objective of this paper to discuss these findings but it may be mentioned, however, that certain relations between concentration and potency have been found which can be expressed in mathematical terms. In the course of these experiments, a method has been developed to produce a sterile crude penicillin, which is more stable than was known before.

For the selection of cases suitable for treatment with penicillin the directions should be followed which have been prepared by Dr. Chester Keefer for the War Production Board and the Office of Scientific Research Development. The indications and contraindications have been carefully elaborated, and in applying these standards the best possible results will be obtained.

The problem whether penicillin should be tried as a last resort in patients whose condition would not justify the administration of penicillin according to the aforementioned standards, lies beyond the scope of this article.

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COMING ARTICLES

Nutrition: The Penalty of Overeating ..... ***N. S. Davis, III***

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Injection Technique for Obliteration of Varicose Veins

By E. BENJAMIN BENNETT, B.S., M.D., *Los Angeles, California*

MANY solutions and various techniques have been used by operators in varicose vein clinics throughout the world, and the results in general have been good; but improvements in the technique and more suitable obliterating agents are always welcome to the physician doing varicose vein work.

I have used most of the common solutions but have found that a saturated solution of quinine lactate has proved more successful, in a long series of cases, than any other therapeutic agent used.

The observations recorded in this article ante-dated the Government's restrictions on the use of quinine and its salts. Because of the difficulty of obtaining a quinine solution, at this time, other sclerosing agents may be used with the same technique; 5% sodium morruhate or sodium psylliate may be used.

If, after the examination, we are entirely satisfied that the varicose veins may be treated by the injection method, the following technique is employed.

The patient is placed upon the ordinary operating table, one on which the leg can be raised and lowered. After thorough cleansing of the skin with any reliable antiseptic, a sterile Luer-Lock type of syringe with a 28 gauge short bevelled needle is used, inserting the needle into the vein at its lowest dependent point, (See Fig. 1).

After the needle is in situ, verified by first withdrawing blood into the syringe, the leg is then carefully elevated to such a height that the vein is entirely collapsed. A tourniquet is then applied at the end of the varicosity near the fossa ovalis (See Fig. 2).

The injection is now started very slowly, giving 1 cc. only for the first treatment; increasing to a maximum of 2 cc. with subsequent treatments. The needle is left in situ for 30 seconds after the medicine is injected, and after withdrawal a compression dressing is first applied over the site of injection; then an elastic stocking is drawn over this.

The advantages of injecting into a collapsed vein are as follows: the medicine comes into more direct contact with the vein wall, it is not diluted by the blood stream; the thrombus that forms is a smaller thrombus, it is harder and firmer in its consistency and there is much less chance of a possible embolic process taking place at a later date.

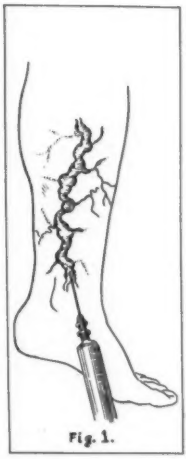

Fig. 1.

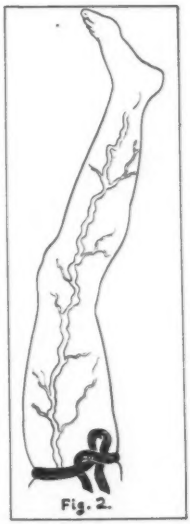

Fig. 2.

Fig. 1. Needle inserted in vein at lowest dependent point. Blood aspirated.
Fig. 2. Leg elevated, tourniquet applied at end of varicosity, near fossa ovalis.

Because the thrombus is smaller in size and the reactionary pain and discomfort of the patient are much less than after ordinary methods are used, and the distance of obliteration is more extensive, the method gives better results than those commonly practiced. By this method, I have seen the long saphenous vein obliterated completely by one treatment.

Mild reaction from the use of the quinine lactate solution may appear in the form of slight sense of heat to the patient; but no serious or untoward reactions have been met with to date. Approximately five hundred cases have been treated using this solution and this technique.

The author is firmly convinced that varicose vein injections into collapsed veins is the only proper method of treating varicosities by the injection method.

2030 Wilshire Blvd.

Duty of General Practitioner Upon Making Diagnosis of Latent Syphilis

By ABRAHAM GELPERIN, M.D., *Cincinnati, Ohio*

THE physician must assume a dual obligation when he makes a diagnosis of latent syphilis. Treatment of the patient is self-evident. If the patient is married it is just as important to examine his family for evidence of infection. A physician who neglects this latter duty is ignoring a medical responsibility.

The diagnosis of latent syphilis is usually divided into early (disease present less than 4 years), and late stages. If there is no history of past venereal infection or penile lesion, the differentiation seems impossible. However, the majority of syphilitic infections are acquired between the ages of 18 and 25 years; therefore one may assume that *a patient over 29-30 years of age probably has late latent syphilis.*

The adequate treatment of latent syphilis necessitated the realization that *the disease is not inactive but smoldering.* It frequently reappears years later in the guise of destroyed cardiovascular and central nervous system tissues. It is equally important to *treat the disease, not the blood serodiagnostic test.* Since the infection in latent syphilis has been present for many months to years, the body has had innumerable antigenic stimulations by the disease process. As a result, the formed antibody, reagin, disappears very slowly from the blood. This gradual loss frequently occurs in the face of adequate antisyphilitic therapy; and is in the same category as the observed slow decline in the widal titre subsequent to complete recovery from typhoid fever.

The treatment of latent syphilis is modified by both the physical status of the patient and the type of latent syphilis (early or late). Patients with no complicating disease, and with early latency, should receive the same treatment as the patients with primary syphilis. The routine suggested by Eagle[1] is recommended; arsenoxide (Mapharsen),* three times a week with an insoluble bismuth preparation once a week, for a total of 8-10 weeks. The dose of arsenoxide is dependent upon the body weight of the patient. A man weighing 120 to 155 lbs. receives 60 mgms; the minimum dose is 30 mgms. for a patient under 90 lbs., and the maximum is 80 mgms. for patients over 185 lbs. The dose of bismuth is 1 cc. of any insoluble preparation.

In late latent syphilis a preparatory series of 4-6 weekly injections of bismuth is suggested (by myself) prior to starting tri-weekly intravenous medication. Otherwise the duration of treatment and the dose of arsenoxide are identical in early and late latent syphilis. If complicating diseases such as arteriosclerosis, chronic nephritis or cholecystitis are present, one should not start with the calculated dose of arsenoxide. The initial dose should be at least halved and cautiously raised as close to the desired dose as is tolerated by the patient. Instead of intravenous injections 3 times a week it may be advisable to give the injections twice a week, or even once a week. If smaller doses are necessary treatment with the arsenical should be continued until the calculated total amount of drug has been administered (approximately 1500 mg. for a 150 lb. patient). A total of 10-15 injections of bismuth is considered sufficient.

Regularity of treatment is important. If the physical examination at the termination of treatment is essentially negative; the treatment series is to be stopped whether the blood serology is positive or negative. A recheck spinal fluid examination should be made 1-2 years later; and periodic physical examinations performed with special attention to the cardiovascular and central nervous systems.

1 Eagle, H.: *Veneral Dis. Inform.* June, 1943.

*Parke, Davis & Co., Detroit.

Experience

I have but one lamp by which my feet are guided, and that is the lamp of experience. I know of no way of judging of the future except by the past.

—PATRICK HENRY

Disabilities and Diversions

By MARIE E. ORMSBY, M.R.C.S., L.R.C.P.,* *London, England*

IN LONDON, people setting off to work after a bad 'blitz of the previous night, found bomb damage had made parts of the usual route impassable; but the police had arranged a new route and indicated it by signs labeled DIVERSION.

Of course the new route was a more roundabout one, it took up more time and energy, but it lead in the right direction to the desired destination.

Those who are called upon to suffer from disablement and disease have their usual route blocked by their disability, but for them there is usually possible a new route toward the desired ends. It needs *diversion* labels.

Another meaning of the word diversion is found in the dictionary as "recreation, pleasant distraction." Thinking of the word in both its relation to a new route, and in this latter sense, I see two reasons why it might be applicable to a paper dealing with occupational therapy in disease.

It is obvious that new sign posts need setting up, but their whereabouts is a less easy matter to accomplish. Each disability blocks a particular piece of the route.

Facing a problem goes a long way toward its solution. I suggest the *disabled* should go over his old route on paper, mark his obstacles, and then try to plan the alternative route. His original diversion labels can be altered as time and experience dictate; some of his obstacles may be removable. The time and energy spent thus are well worth while. No one can do the affected person's part for him, but they can often help, and they are more dispassionate and may see other openings. There are certain general principles common to all good plan. One might also consider some individual cases.

Case 1

An elderly gentleman who has kept his mind young, is suddenly stricken with heart trouble—angina pectoris. He has been a man of importance in his business, and in his social and domestic circles. His hobbies have been active ones, gardening and games. He likes to be independent, has ideas and originality. Imagine his consternation when he is told what restrictions he must place on all his activities. The giving up of his business life means much loss of income. For the first time in his life he is debarred from participation in domestic difficulties and worries, he must allow others to wait upon him, and, in some measure allow others to decide for him at first. He feels poorly and is perplexed, so many roads seem blocked. At first he is inclined to think death would have been the lesser evil. It is at this stage that a few kind and understanding words from his doctor may relieve him greatly. If he can be made to believe that offers (as independent and with as many responsibilities) after a short inactive period found that a new route could be mapped out and followed, he can take heart. He may be content to await a time in the near future when he too can plan to proceed. Meanwhile, other kinds of diversion remain and minor distractions may alleviate his condition.

So far so good. When the time comes he should plan by degrees, marking a diversion road at each obstruction on the old route—*one by one*.

For Example. He may apply his gardening knowledge by employing and directing labour in his own garden, and he can help those with less knowledge of the subject. He can be a critical onlooker at games, explaining the art to the uninitiated and give them another interest. He can find recreations where he can use skill without much physical effort.

It is of immense importance to him, to learn to control his emotions. After he has gained some power in this most difficult accomplishment, he can take up some of his old responsibilities. It is the minor thoughts and emotions which count most, and while victory may be his in the matter of considering some things there are others which will be much more difficult.

I wonder if the reader ever heard in youth a recitation where both spoken and unspoken thoughts were given. Some lines remain in my memory. "Come near and kiss the baby dear—And give it p'raps the measles!" The turmoil of mind and the anxiety caused by the spoken thoughts—but a little quiet reasoning, may alter that. It is true "a man is as his thoughts are," but it is equally true that man has great power to control them, as he has control of speech—however, I do not mean to imply that he can control his first instinctive thoughts. He can replace them by others, better and less emotionally upsetting. Poise and serenity are accom-

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plished for many of us only at the cost of continuous effort and self sacrifice, and, for some people, by divine aid.

Case 2

An active independent woman is suddenly faced with defective eyesight and the danger of total loss of sight. She has always done everything for herself, and a very great deal for others. She is cultured, art and literature have been big things in her life. She has written regularly to a large circle of acquaintances, and her letters and the relief of writing to her have been valued. She has driven a car, loved watching the birds, making landscape pictures with a camera, enjoyed seeing the country. Indoors, as well as reading, she has designed and executed embroidery, and has also made and mended for the household. In short, used her eyes even more than in normal, though not to excess or in poor light.

What must be her feelings when her route is obstructed at so very many points, and she is dependent on others to such a degree. Death seems preferable to such a restricted life.

I do not pretend to know the cost of courage and toil of her who has found and taken the new route. I can only admire the unselfishness and splendour which has made her serene in disaster and a prop to others.

Some of the roads were the following: (1) Choosing papers and books with large clear print, reading for shorter periods at a time and resting for periods of reflection about what was read. (2) Writing on white paper in large handwriting with very black ink, or with an ink pencil, again only for short periods at a time. (3) Selecting for indoor recreation the needlework, etc. which needs least activity of vision, and the crafts (knitting, etc.) which make little demand on eyesight. (4) Learning touch typing. (5) Finding a suitable reader. (6) Entertaining friends. (7) Listening to music, (wireless and gramaphone as well as other music). (8) Learning new "easy to see" things to help others. However simple the craft seems at first it is bound to give much greater fields for knowledge and accomplishment as time goes on, i.e. gardening, cooling house work. (9) Intelligent listening to wireless. (10) Finding co-operative friends with good eyesight.

The Deaf

The deaf person drives along a road where the blocks of those with defective eyesight are obliterated, and the deaf may use their eyes as they never did before. But there are very trying obstructions for the deaf and partially deaf, and it is strange so little sympathy is given.

Spoken conversation is difficult, misunderstanding easy, music ceases, travelling and shopping become hard tasks, and theatres and lectures are only pictures. The deafness which shuts the sufferer from so much social life throws him back upon himself, and often makes him unduly suspicious and depressed. Only those who have suffered, or been much with those affected, know the extent to which the disability interferes with the usual route.

The careful comparison of the old routes and possible diversions is worth the time and effort entailed. Diversions are many, correspondence, reading, all visual pleasures, and many competitive games i.e. chess, and outdoor games.

But enough of concrete cases, the general principles are the same for each. The first step is to overcome the *inertia*, which itself forms a removable block in any new road. Tackle the problem by stating it fully and work at the plan of diversions one by one with patience and perseverance.

As for diversions in the sense of "recreations and pleasant distractions," I must refer those interested to a fuller article elsewhere.*

A real search for diversions of this type entails a distraction in itself! The making of a full list of possible diversions should be worked up carefully, for more avenues are open than appears at first sight. The choosing of the diversion should be deliberate, and no pains must be spared to give its pursuit a trial. Doctors and workers in recreational therapy can really help, if full use is made of their services. It is wrong to postpone seeking assistance because the patient is slightly handicapped. Life is a relative term, and it may easily be possible to attain a fuller life on the new route than on the old.

In all cases of trouble the first realization, at whatever stage of disability, brings shock. Those who suddenly realize an increasing handicap and its further implications, are shocked. Often, too, they are not well themselves. They cannot see things in perspective under such circumstances. This is the time to build up the patient's hope and health, and persuade him to await the keener perception that will come later. Decisions, so difficult early, become easier later on, so long as the day for decision is not left too long. Sedatives, tonics, and sympathy work wonders.

* Hobby Horses, by M. E. Ormsby, M.R.C.S., L.R.C.P. Occupational Therapy and Rehabilitation, Vol. 14, No. 4. August, 1935.

GRADUATE COURSE

Intravenous Therapy*

(Discussion)

R. L. Haden (Cleveland): When we try to replace the normal constituents of blood, we must think in terms of the more important elements. The most important, by far, is water. Next are the mineral salts, protein and glucose, and the clotting factors. We do not usually think of the clotting elements of the blood in relation to intravenous therapy, but a patient with thrombopenic purpura is given platelets to replace what normally should be there but is missing.

We try to help the patient by using the normal constituents of the blood in the presence of infection and various types of toxemia. Here again we use water, with salt, glucose, and red blood cells to furnish hemoglobin and even white cells, sometimes with platelets. We should think also in terms of actually feeding the patient through intravenous therapy to maintain the food and fluid balance of the individual, which involves vitamins and other indicated substances under certain conditions. Under this general head, we should also think of the treatment of shock.

We next come to the problem of intravenous therapy in relation to abnormal constituents. Here we enter the great field of drug therapy in which the therapeutic agent is given intravenously. All of us agree that intravenous medication has been enormously abused under certain circumstances. Consider the sulfa drugs and their intravenous use under appropriate conditions. Likewise we deal with bacterial and protein products, all of which are abnormal as far as the blood is concerned, but have been developed to help patients when in some specific difficulty.

Subcutaneous vs. Intravenous Therapy

We should realize the limitations of treatment administered subcutaneously. The amount of fluid absorbed subcutaneously over any reasonable length of time is quite small as compared with the intravenous possibilities.

An outstanding advantage in the use of intravenous therapy is the rapid rate at which substances thus introduced have an almost immediate bodywide distribution of the therapeutic agent, whether that be red cells, water, glucose, salt, or sulfa drugs.

Reactions

Perhaps the most important consideration of all is the occurrence of the various reactions which may prove serious and in some cases have led to the death of the patient. These are the so-called *nitritoid reactions*, in which there are some spastic phenomena, expressed particularly by pain in the chest or the back, accompanied by chills, fever, and shock.

One might say a word also about the precautions that are so necessary in connection with intravenous therapy. It is amazing to note how frequently this procedure is carelessly attempted, often to the great disadvantage of the patient.

Lester Hollander (Pittsburgh): When intravenous medication is given in the office, insist upon the patient being in the prone position. Proper antiseptic or aseptic procedures may well be re-emphasized also, because so frequently they are not observed in the ambulatory clinics or in the private offices.

Before intravenous medication is given to an ambulatory patient, we should be satisfied that the drug may not be used intramuscularly, or in some other way with equally good results. Too often the chief reasons for giving intravenous medication, with the exception of some of the important arsenicals, seem to lie in the ease of administration, the lack of pain which is produced, and the fact that the patient will definitely return for further observation.

We observe psychic shock much more frequently in ambulatory patients than in bed patients. I have in mind certain ones in whom great fear of antisyphilitic medication was created by talking it over for a long time before. In such instances it *is very hazardous to give intravenous medication of any kind.*

Intravenous medication should be given to the patient on an empty stomach, and he should be properly prepared to receive that particular medication. *One must be sure that the medic-*

*This excellent teaching discussion originally appeared in the Penn. Med. J., May, 1943.

ament does not present greater danger to the patient than the disorder for which one gives the medication intravenously.

Max Strumia (Philadelphia): If a patient arrives at the hospital in a state of deep shock and dehydration, the worst possible procedure is to start giving saline or glucose intravenously. Dehydration plays an important role in shock, but that is relatively a minor danger. The major danger is from plasma proteins. They would be washed out of the vascular system by adding a diffusable crystalloid. This advice applies to those who use too much crystalloid solution. They are in the majority.

Since water is generally the element that one has in mind, the ideal method is to give it in isotonic form, that is, either with saline or 5 per cent glucose.

There are some who still hold the opinion that in certain conditions more concentrated glucose is needed. In certain cases, in which a hepatitis plays a part, that may be justified; but in the ordinary case there is very little need for using hypertonic glucose, since if you give it slowly, you might as well give 5 percent. If given rapidly, it is soon over the kidney threshold and spills over in the urine.

J. E. Rhoads (Philadelphia): If some insulin is given with 10 per cent glucose can the spill be reduced—in other words, if the insulin is added to the glucose solution so that it will be absorbed at the same rate as the glucose solution entering the vein, will more of the glucose be utilized?

Dr. Strumia: That is the way 10 per cent glucose should be given—with insulin. If there is a lowered carbohydrate metabolism, such as follows protracted dehydration and starvation, it is very essential to oxidize a greater number of ketone bodies; 10 per cent and even higher concentrations are very useful and are indicated. Of course, the speed of the metabolizing action on the sugar should increase by giving an adequate amount of insulin, being certain it is given at the same time and in the proper dosage.

Dr. Haden: Dr. Strumia, have you ever seen edema develop in a patient as the result of using isotonic saline solution?

Dr. Strumia: Yes, there is a group of patients in whom edema will develop from isotonic salt solution, even if it is given within what would be considered the normal intake. Such patients have a hypoproteinemia to start with, to a critical level where peripheral edema is not noticeable. This type of patient, of course, is very common in surgical practice.

There are patients who have had malnutrition for a long period of time. They usually arrive at the hospital as an emergency or quasi-emergency, and the tendency is to rush to an operative procedure.

If the patient is given plain salt solution postoperatively, he is being prepared for a hypostatic pneumonia. It is strongly felt that if all cases of postoperative pneumonitis were studied carefully, it would be found that a great majority of them have had subclinical hypoproteinemia. Under those conditions, the administration of even a small amount of saline solution is followed by the rapid formation of edema, which surely would not appear if the protein level were normal and the patient were in good condition.

Place of Plasma in Replacement Fluids

Dr. Strumia: *Plasma is not a blood substitute.* It is better indicated as a blood derivative. Nothing substitutes for whole blood.

In the administration of plasma, there are two general ideas or lines of thought. One is that it be used when clinically preferable to whole blood or other intravenous therapy. The second consideration is that it lends itself to preservation, transportation, and rapid use when other fluids would be difficult to use. In other words, there is an absolute clinical indication for plasma, and also a mechanical, technical laboratory indication for it.

That differentiation must be kept in mind today, for in an emergency the word "plasma" appears too often. Many have taken for granted that plasma can be substituted for whole blood or vice versa.

Indications for Blood

In case of a patient who has a severe hemorrhage, which is continuing at the time of treatment, you cannot use plasma, because it would simply dilute the blood until a point is reached where the total oxygen-carrying capacity is so low that anoxia (lack of oxygen) results and the purpose of intravenous therapy is defeated. Where there is tissue anoxia, there is continued permeability and the condition that maintains the cause of shock—loss of fluid—will go on unchecked.

Second, if the patient has carbon monoxide poisoning or any form of poisoning in which there is disability of the oxygen-carrying capacity, blood must be used.

Third, in a case of purpura, where one is depending on the blood-clotting

mechanism replacement, fresh whole blood must be used.

Indications for Plasma

Suppose the patient is badly burned or in a state of delayed shock. In either case the amount of plasma protein that must be introduced into the patient's general circulation to obtain a proper hydrostatic pressure is so great that it should not be administered as whole blood because that would produce a severe overconcentration of red cells, with an increase of the blood viscosity, and therefore increase the resistance to the circulation, which would overburden the heart.

Burns, late shock, severe hypoproteinemia from liver disease, and severe forms of nephrosis are clear indications for the use of plasma in place of whole blood.

Finally, there is another group of conditions in which in hospital practice one or the other may be used, but in an emergency whole blood cannot be used because it is difficult to obtain in a hurry, it is not easy to preserve, and it is difficult to transport. In this group of cases, which includes most of those with ordinary shock, one feels that one must use whatever is available in the shortest period of time. That is why plasma usually has the advantage over whole blood, not because it is any better physiologically, in fact, it might not even be as good—but because it is available in circumstances under which whole blood is difficult to obtain.

Lyophilization of Plasma for Nephrosis

Dr. Haden: Lyophilized plasma in the treatment of nephrosis, a condition in which the blood proteins are low, has been used. Satisfactory results have not been obtained by giving blood transfusions or ordinary plasma, but results were excellent when lyophilized plasma was given.

I have a very strong feeling that we are giving something quite different in such cases, but I don't know what it is.

Plasma vs Whole Blood

Dr. Rhoads: Definitely fewer injured patients react unfavorably to plasma than to whole blood tranfusion. Perhaps that is because conditions are not optimum in cross-matching, but I think that conditions are fairly good and that most of the reactions seen with blood transfusion are not failures to match but are minor reactions.

Another advantage is that one plasma can be mixed with another—usually we use pooled plasma—whereas there is some danger in giving transfusions from a series of donors without cross-matching each donation with the patient's blood after the last donation. Possibly that danger has been overrated, but I believe that it still exists.

Cases in which plasma has been most clearly indicated are patients with burns. They need very large amounts. In many burned patients a 250 cc. transfusion is entirely inadequate, sometimes having no demonstrable clinical effect. Even 500 cc. of plasma often has a rather transient effect. Plasma loss in patients with a 20 per cent burn approaches 1500 cc. within the first six to twelve hours, and if that is replaced, a good deal will be lost and more required.

It is our general policy not to try to replace all of the lost plasma at once. We replace enough to keep the patient's hemoconcentration back toward a normal range.

Formulas have been developed for calculating a suitable dose of plasma in terms of the weight of the patient and the hematocrit or the hemoglobin if it can be observed accurately. Harkins' rule of 100 cc. of plasma for each point the hematocrit stands above normal and 500 cc. for each point the protein concentration is below normal works out fairly well for the usual range of abnormality.

Pemphigus

Dr. Hollander: In dermatology, blood tranfusions have given excellent results in the fatal type of pemphigus. Patients are not cured but their lives are made bearable. One of the most amazing things is that, after a blood transfusion, the awful stench that is so characteristic of pemphigus disappears practically within the first twenty-four hours.

In the treatment of *severe toxic erythema*, the results are remarkable.

Use of Plasma in Hemophilia

Dr. Haden: Recently a boy, a typical hemophiliac, who bled from broken teeth, had fifteen or twenty transfusions. Ordinarily, transfusion is the proper treatment because it includes the clotting constituents of the blood and replaces what is lost, but nothing helped until one dose of lyophilized plasma was given, and the bleeding stopped immediately. It seemed to be due to some action that was different from the normal protein action of the blood.

Amino Acids

Dr. Rhoads: Where proteins can be fed by mouth or into the alimentary tract lower down, we believe those are the routes of choice for building plasma protein. If these routes are not available the next best way to supply the body with protein is to give plasma, but it

takes a large quantity. The actual amount has not been ascertained, but it is probably in the neighborhood of a liter (one quart or 1,000 cc.) a day to maintain patients in nitrogen equilibrium, assuming that their total caloric requirement was supplied in part with large amounts of carbohydrate. That has proven impractical as a rule, and for that reason there is a place for amino acids intravenously in patients who require protein over a considerable period of time and who cannot take it by mouth or alimentary tract.

There are two commercial preparations that have been used. Both are hydrolysates of the protein casein. One is an acid hydrolysate, and the other is hydrolyzed by action of pancreatic enzymes. It has been possible to keep experimental animals and some patients in nitrogen equilibrium by use of these materials, although relatively large amounts have been required, probably over 100 grams of amino acids per day. We have not succeeded in enabling the patients to build plasma protein, but that has been accomplished elsewhere.

Intravenous Therapy in Dermatology

Dr. Hollander: 1. Gold sodium thiosulfate, of interest only to dermatologists for awhile, is now added to the armamentarium of the internist and to those who keep the nations joints in flexion.

Gold sodium thiosulfate, or any of the gold salts, was brought into use through the work of European dermatologists under the proprietary names of sanocrysin and krysolgan. These gold salts came into use in the treatment of lupus erythematosus, lupus vulgaris, and various types of systemic tuberculosis having cutaneous manifestations. Serious drug intoxications occur, but they can be prevented if the dosage of the gold preparation is small and one thoroughly familiar with the cellular content of the blood. In the presence of leukopenia, that is, if the leukocyte count is below 5000, gold sodium thiosulfate or any gold drug should not be administered intravenously. If this warning is not heeded, serious hemorrhages, both subcutaneous and submucous, will occur associated with an exfoliative type of dermatitis. A good many fatalities were caused by the early and injudicious use of this very potent but toxic agent, and uncontrolled use of it may be very regrettable.

2. Sodium iodide is frequently used in deep-seated mycelial (fungous) infections. The value of its intravenous administration is at time questionable since big doses may be given through the gastro-intestinal tract except where it causes a gastro-intestinal upset.

3. Transfusion of whole blood is used in pemphigus and severe purpuras.

4. Glucose. In exfoliative dermatitis the intravenous administration of glucose is of great value. In passing, I want to call attention to the frequency of exfoliative dermatitia as it affects middle-aged or older men, with the exception, of course, of exfoliative dermatitis which follows intravenous medication with arsenic or gold. The exfoliative dermatitis is well combated with intravenous injections of glucose.

5. Sodium thiosulfate. Since the introduction of this chemical it has become an important drug in the treatment of diseases caused by heavy metals. It was introduced as an agent in the treatment of exfoliative dermatitis produced by arsenic. I think that it is a valuable drug, but this opinion is controversial.

8. Tartar emetic. In the very troublesome and chronic conditions of granuloma inguinale and lymphopathia venereum, tatar emetic is being used, even if not with uniform success. The new sulfa drugs are replacing tartar emetic to a considerable extent.

Drugs Intravenously to Allay Shock, Convulsions, and Pain

Dr. Rhoads: Intravenous therapy is depended upon chiefly for uses other than drugs. One drug which has to be administered intravenously is herapin. It seems that herapin is likely to be used to an increasing extent as the possibilities of vascular surgery are developed.

The other preparations that are commonly given intravenously, vitamins, could ordinarily be given by mouth were it not for the special conditions of surgical patients. We give a great deal of vitamin C intravenously because of its relation to wound healing, and also vitamin B_1.

Dr. Haden: No difficulties have been experienced by us when giving thiamine chloride intravenously. There is doubt in my mind whether there is any point in giving it, because only a certain amount can be used.

Anesthetic Convulsion

G. J. Thomas (Pittsburgh): Frequently, we hear of a patient having a convulsion under an anesthetic. Many etiologic factors have been given as the cause of these convulsions, among which is calcium deficiency.

In the treatment of these cases, we give barbiturate intravenously. We prefer pentothal sodium, 4 per cent solution, in sufficient dosage, given slowly until the convulsive seizures cease. The anesthetic is continued and the patient

is treated according to the symptoms afterward. These patients invariably take from 3 to 5 cc. of a 4 per cent barbiturate intravenously.

A few clinics believe that calcium gluconate may help these cases. It has been tried in appendicitis cases because of the belief that they are the ones subject to these anesthetic convulsions. Some give calcium gluconate intravenously if these patients have convulsive seizures while on the operating table.

Treatment of Colic

Frequently physicians find it necessary to administer some agent to relieve a renal or biliary colic or some other colic in patients. The physician gives a large dose of morphine subcutaneously or intramuscularly and sits at the patient's bedside, hoping that the effect of the morphine will soon take hold and the patient will get relief. It has been found that some individuals with this type of colic will receive immediate relief, within fifteen or thirty seconds, if the morphine is given slowly, intravenously.

The dose generally given is one-third of what is usually given hypodermically.*

Calcium for Asthma

Dr. Haden: There have been cases of very severe asthma in which the use of calcium intravenously was of definite value because it decreases the sensitivity of the nervous system. That is true of either calcium chloride or calcium gluconate.

Vaccine Therapy Intravenously

Dr. Haden: Do you think that vaccines are of value intravenously for their specific effect?

Dr. Strumia: No. I do not think there is any reason to believe that they have any value over what they might have if administered via other routes. The only justified use is non-specific—the production of hyperpyrexia—and in such cases perhaps safer methods could be substituted.

There is a group of excellent internists, particularly specialists in nervous diseases, who feel that the results are better than the hyperpyrexia caused by mechanical means or nonbacterial antigens, such as some of the caseins (milk).

I would like to say that the reaction obtained by the administration of vaccine intravenously, usually of the typhoid group, is often quite explosive, and it is not at all controllable. You can never be sure that a certain dose will produce the same effect in two cases, so that some caution should be exercised in the use and the dosage of vaccines intravenously for the purpose of producing hyperpyrexia.

Typhoid Vaccine for Arthritis

Dr. Haden: We have used typhoid vaccine a great deal for its nonspecific effect, and have some very positive opinions about it. First of all, we think it is of great value if properly used. That brings us back, as far as internal medicine is concerned, to its use in certain types of joint disease, such as rheumatoid arthritis.

From the standpoint of internal medicine there are certain things that we are constantly coming back to, such as the use of calcium salt under certain conditions, particularly in paroxysms of asthma, which are very difficult to control, and in various types of heart conditions. We also find that an aminophylline might be of value intravenously in asthma and give results that cannot be obtained subcutaneously.

I am firmly convinced, as just a general practitioner, that iodine will often be of value intravenously when satisfactory results are not obtained by mouth.

Gold has been mentioned. Of course most of the gold given is in the treatment of arthritis, but I feel that it should be used only for rheumatoid arthritis. Unfortunately, it is being used for every kind of skeletal pain.

In determining what the patient needs, good laboratory work is required, but unfortunately there are many physicians who do not have access to good laboratory facilities. There are, however, a few simple things that can be done. The determination of the total plasma protein is quite simple. Also, one can learn a great deal from the color and specific gravity of the urine, the amount of chloride present in the urine, the output of urine during the day, and the temperature of the patient. In fact, ordinary common sense will indicate in most cases just about what the patient needs.

Dr. Strumia: The history of the patient will help in nine out of ten cases.

Dr. Haden: In other words, instead of going to the laboratory, the necessary information can often be obtained from the patient.

Mercurophen is another drug often given intravenously that is of much value, but in many cases it can be given subcutaneously just as well.

*As Ochsner said, "The dose of morphine is enough." Dissolve ¼ gr. morphine tablet in sterile water and inject slowly until the pain disappears.—Ed.

Philippe Ricord

Syphilologist

PHILIPPE RICORD
From Garrison's "History of Medicine"

AS LONG AGO as the early part of the Sixteenth Century, Hieronymus Francaster composed that remarkable medical treatise, couched in Latin hexameters, *"Syphilis sive Morbus Gallicus"*; and from (or even before) that time, this terrible malady was, for many years, known by the name he immortalized—"The French Disease," or "French Pox."

Among the citizens of the country thus stigmatized, who contributed to our knowledge of this disease, Philippe Ricord occupies a prominent place.

Ricord, though of French Parentage, was born in Baltimore, Maryland, December 10th, 1799, and received his basic education in that city and in Philadelphia, where he began his medical studies under his brother, Jean Baptiste Ricord.

In 1820 he went to Paris, where he continued his studies at the Faculty of Medicine, from which he received his medical degree in 1826 and returned to his native land to begin the practice of his profession at Olivet, Louisiana, near New Orleans.

He did not remain with us long, however, but returned to Paris in 1828, where he spent the rest of his life, being known there as "The Great American Doctor."

At first he supported himself in Paris by giving lectures on operative surgery at La Pitié Hospital, but in 1831 he was appointed surgeon-in-chief to the venereal disease hospital of southern France, a position which he held until 1860. Here he made an international reputation as a genito-urinary surgeon, among other things devising a new method for curing varicocele and performing urethroplasty.

His greatest contribution to medicine was in clarifying the rather foggy ideas about syphilis. John Hunter had made a clear distinction between that disease and chancroid, so that his name is still attached to the hard or syphilitic chancre, but he believed that gonorrhea and syphilis were the same disease. Ricord made the distinction between the two diseases clear, described the primary, secondary and tertiary stages of syphilis and established a rational method for treating it, and thus, as well as by his fairly voluminous writings in this field, established his position as being, after Hunter, the greatest pioneers in venerology.

In 1852 Ricord became the physician of Prince Louis Napoleon and, after he became Emperor, was his consulting surgeon and attended him for the disease of the bladder, of which he died. During the seige of Paris, he was president of the Lazeretto and gained fresh honors, being raised to the rank of grand officer of the Legion of Honor and receiving a number of foreign decorations. He continued his profession into his eighty-eighth year, until his mind gave way, and he died in Paris, October 21, 1889, at the age of ninety years.

Ricord was a man of impressive presence and immense vitality, and was almost as famous as a raconteur of risqué anecdotes of his speciality as he was for his important contributions to its science and art. Dr. Oliver Wendell Holmes called him "the Voltaire of pelvic literature—a sceptic as to the morality of the race in general, who would have submitted Diana to treatment with his mineral specifics, and ordered a course of blue pills for the vestal virgins."

Editorial

How to Be Happy Though a Physician

How can a physician be happy? Doesn't he have to make night calls? Isn't he bothered with many "neurotics?" Business men can make much more money, and have more time off. Patients get sick right at dinner time and during that long awaited party. Patients fuss about this and that.

If you agree with the above, you are a member of the big family of I-am-sorry-for-myself. You are taking the joy out of life for yourself and your families.

Vash Young,* in "A Fortune to Share" writes, "Suppose you owned a factory. Would you manufacture only stuff that you do not want, do not need and can not use to advantage? . . . Consider that you do own a factory, a thought factory. It is inside you, and you are both owner and superintendent. . . . Nothing can happen in that factory without your approval. Nothing can go into it, neither raw materials nor partly manufactured goods, except on your permission. Nothing can come out of it except the products that you yourself design."

"A thought factory . . . and you have turned it into a junk factory. Take a look at your products. Fear, worry, impatience, anger, doubt. Are you proud of them? Can you expect other people to welcome such goods as you are manufacturing? Your factory is a menace to yourself and a nuisance to others."

If any man should have happy thoughts, it should be the physician. He is one of the few men who have an opportunity to be of real help to his fellow men; he has a high standing in his community; he never need worry about starvation or other material poverty; he has a profession that is mentally stimulating, and in which there is no fear of running out of new material; he has the happiness that comes of playing a game far more fascinating than bridge or other man made amusement. He can relax by doing something entirely different or by attending a medical meeting or course. He is in business for himself, with no "boss," whom he must please. He has hundreds of employers.

The only things he needs to do to be happy are: (1) Don't complain about the upsets that are part of the medical practice—it is childish to fuss about a call; (2) give his patients the best thought and service that he can, remembering that happiness comes from giving, not getting; (3) be proud of being a physician and study a little each day so as to keep on being an alert one.

✦

The only ones who stop developing are those who quit trying, and no job seems difficult by the time you have qualified yourself to handle it.—ROBERT QUILLEN.

✦

Eight Will Have Cancer

IF the physician will conscientiously examine the skin, the mucous membranes of oral and nasal cavities, perform a rectal, vaginal, breast, and abdominal examination on every woman who comes to him, he will find a great number of tumors, both benign and malignant, which have caused no symptoms.

Eight women out of each one hundred, who visited the Tumor Clinic of the New York Infirmary for Women for an examination, were found to have a malignancy of the ovary, uterus, cervix, skin, or breast.

Total number of examinations	1,103
Tumors: Malignant	84
Benign	267
Cervical erosion, chronic mastitis, other diseases	436
No lesions	316

* Young, Vash: *A Fortune to Share*. Cleveland: The World Publishing Company (2231 West 110th St.). 50 cents.

L'Esperance, Elise: Cancer Prevention Clinics. *Med. Woman's J.* Jan., 44.

These patients were attracted to this study because they were worried about the possibility of having cancer. Some had been brushed off by their own physicians with little or no examination (the physicians thus ensuring themselves loss of patients, practice and prestige).

Thirty percent of these patients reported for examination because of lectures and demonstrations, forty percent applied to the Cancer Committee and were referred for examination, sixteen percent were sent in by former patients and *.036 percent* were referred by physicians.

As the public's education increases, the demands upon the physician increase. Do you thoroughly examine your patients?

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If you would be pungent, be brief; for it is with words as with sunbeams—the more they are condensed, the deeper they burn.—ROBERT SOUTHEY.

✦

Aminophylline Deaths

DR. GEORGE A. MERRILL of Brooklyn reports in the Dec. 23, 1943 issue of the Journal of the American Medical Association, three cases of deaths apparently attributable to the intravenous injection of aminophylline.

One injection was given to a man within four hours of the onset of an acute coronary thrombosis. No reason is given for injecting such a powerful medication into a man in such a critical condition. When aminophylline was first introduced, your editor injected 3¾ gr. (0.25 Gm.) intravenously into a woman with angina pectoris. The resultant syncope was anything but pleasing, although the pain was relieved very promptly, and in a few minutes she felt much improved.

It would seem that in coronary thrombosis, the intravenous injection of ⅙ to ⅓ grain of morphine, stopping its administration when pain was relieved, would be more logical and less dangerous.

The second case was that of a man of 73 who was a chronic asthmatic, had a blood pressure of 200/90 (evidence enough of hypertensive heart disease) and "heart sounds of poor quality." Adrenalin and oxygen failed to relieve the asthma (cardiac asthma? It is well known that chronic asthma overloads the right side of the heart and many such older patients have cardiac hypertrophy and decompensation).

The third patient was a man of 70 with acute cardiac decompensation and enlarged heart (cor bovinum — usually indicating aortic regurgitation, just the type of heart which breaks rapidly once decompensation appears).

Used *judiciously*, aminophylline will relieve more dyspneic patients than any other medication. Younger asthmatics who have resisted all other therapy will often breathe comfortably within a few minutes after its injection. Cardiac patients who are not in critical condition will often get much relief when they receive on alternate days, the intravenous injection of Salyrgan or other merourial diuretic and aminophylline, and their edema will rapidly subside. (Speaking of edema, Surgeon K. R. Nelson of the U. S. Public Health Service has shown that the edema of advanced decompensation which has resisted digitalization, Salyrgan and aminophylline, will often disappear during 12 to 24 hours of oxygen treatment.

Rackemann writes (*Cecil's Medicine*, 1943, page 485), "Too much adrenalin can cause auricular and perhaps ventricular fibrillation." Patient number two had received two cc. of epinephrine within the 16 hours preceding the aminophylline injection.

All patients who receive aminophylline by intravenous injection complain of a marked warmth felt over the entire body when the medication is given at all rapidly.

Moral: (1) Don't give aminophylline intravenously to elderly, critically ill cardiac patients; use Barach's suggestion of the rectal route. (2) Give it very slowly. Stop for a minute or two, when the patient complains of generalized warmth, before resuming the injection. (3) Don't be afraid to use it.—R.L.G.

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Curtailing Freedom

Necessity is the plea for every infringement of human freedom. It is the argument of tyrants; it is the creed of slaves.
—WILLIAM PITT

CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

Empyema

Chronic empyema is a disease entity which fortunately is becoming less frequent due to two reasons. First, because of the remarkable results being accomplished in the treatment of pneumonias by the sulfonamides and second, because the proper treatment of acute empyema is much better understood by the medical profession at large than it was only a few years ago.

An acute empyema usually becomes chronic because of one or a combination of the following factors: 1. The empyema was inadequately drained. 2. Open drainage was resorted to too early. 3. It was drained too late. 4. Underlying pathology in the lung parenchyma feeding the pleural infection. 5. The presence of bronchial fistulas. 6. The presence of foreign bodies in the pleural cavity such as pieces of drainage material, necrotic rib, etc. 7. An apparently acute pyogenic infection of the pleura may in reality be on a tuberculous, or a neoplastic basis. 8. Occasionally a subphrenic abscess may perforate through the diaphragm and give rise to a chronic infection of the pleura.

Don't Open Early

Wait for pus formation because:

(1) There is less danger of creating a general open pneumothorax because there is a more or less circumscribed abscess shut off by adhesions from any communication with the free pleural cavity so that during the operation the pleural cavity, properly speaking, is not entered.

(2) Even if an open pneumothorax is created, its harmful effects are lessened because (a) the subsidence of the active pneumonia has the effect of making the area of the air-inlet to the lungs larger than when many of the bronchioles and much of the lung parenchyma are blocked by the pneumonic process, so that the pleural opening is incapable of producing the same amount of harm; (b) the presence of adhesions and the inflammatory thickening and induration of the mediastinum tend to make it less mobile; (c) the patient's need of oxygen is less because of a more nearly normal metabolism; (d) the respiratory compensation is more efficient since, owing to a diminished toxemia, the respiratory muscles will not become so easily fatigued.

(3) The patient is in better condition to withstand whatever shock there is connected with even so slight an operation as pleural drainage.

(4) There is probably less risk of creating a septicemia from absorption of organisms from the fresh operation wound, an occurrence which seemed to us during the war to have happened a few times by the finding of positive blood cultures a few hours after operation in cases in which previously there had been sterile blood cultures, the operation having been done early in the disease.

Aspiration

If the accumulating fluid is a source of embarrassment to the cardiorespiratory mechanism, aspiration may be done without danger and occasionally, one may be rewarded by the gratifying result of a cure by this method. If one uses the aspiration method to tide the patient over the pneumonic stage, the dangerous period, to be followed by open drainage later, then he is using the best procedure.

The time to discontinue aspiration in favor of open thoracotomy is largely based on the appearance and consistency of the exudate. When it becomes definitely purulent this time has arrived. Some observers advise taking the specific gravity of the aspirated exudate and believe it is time for operative interference when this reading reaches 1.040. Empyemas from pneumococcus in-

fection may, in general, be drained with safety earlier than those resulting from streptococcus infections because the pneumonic process is of shorter duration and the exudate in the pleura becomes more rapidly purulent.

Even though the individual survives the shock of too early an operation, he is still a more likely candidate for the development of a chronic empyema than he would have been with operation at the optimum time. The collapsed lung and the displaced mediastinum leave a cavity of great size to refill and the thickening of the visceral pleura and fibrous changes that take place in the lung parenchyma may prevent sufficient lung re-expansion to accomplish this end.

Repeated aspiration may occasionally result in curing an empyema and so may intercostal drainage. Either method is not in keeping with the time-honored doctrine that pus calls for wide-open adequate drainage. We believe in resecting a generous piece of rib, enough to permit the introduction of a tube at least 2 cm. in diameter. As is well known, this should be done in the most dependent portion of the empyema cavity. The usual location, in an empyema that is not encapsulated, is the mid-postaxillary line, resecting either the eighth or ninth rib. The pleural space normally extends lower but by the time the patient comes to operation the costophrenic angle has usually become obliterated by adhesions. It is important, also, not to place the opening too far anteriorly, lest pocketing occur when the patient is recumbent.

Not only is it important to make an adequate primary opening into the pleura but it is equally important to maintain that opening until the pleural cavity has largely become obliterated and sterilized. This can be determined in the usual case by the amount and character of the exudate, or examination of smears and cultures of the exudate offers a more scientific, if not a more practical, determination of the time to discontinue drainage. *An improperly placed and too small thoracotomy opening undoubtedly accounts for the majority of empyemas becoming chronic.*

Foreign bodies such as a piece of drainage tube, a piece of necrotic rib, or other substances may account for an empyema not closing. Such foreign bodies may be picked up by x-ray, by digital exploration of the cavity, by a thoracoscopic examination, or by the use of a cystoscope in the absence of the appropriate instrument.

Failure

It is important to remember that the failure of an empyema to close may not be primarily due to the condition of the pleura but may be secondary to an involvement of the lung itself. Bronchopleural fistulas, when small, may be expected to close spontaneously but when large they tend to prevent re-expansion of the lung by interfering with increase in pressure in the bronchial tree during ordinary respiration, coughing, sneezing, straining, blowing, etc. Reinfection of the pleural cavity may occur by way of the fistula especially when it is associated with bronchiectasis, abscesses, or other types of infection of the lung parenchyma.

One must not forget that the original lesion in the lung may have been a tuberculous one and the infection in the pleura is secondary to this, plus a mixed infection. The same may be said for a primary neoplastic lesion of the lung with a secondary involvement of the pleura, though the pleural fluid when present is usually tinged with blood rather than being purulent.

Negative Suction

The writer is firmly convinced that negative suction applied to the pleural cavity has very definite advantages for the following reasons:

1. Maintaining a constant intrapleural negative pressure, it is believed, not only prevents the lung collapsing to the degree it would with an open thoracotomy but it would appear to be of material value in assisting in re-expansion of the lung.

2. An effort is made to place the thoracotomy tube at the most dependent area of the empyema cavity but not infrequently it is found, by digital exploration after opening into the pleura, that the opening is too high. Rather than resect a rib lower, it is preferable to locate the most dependent spot with the finger introduced into the pleura and then insert a mushroom catheter, intercostally, through a stab wound into the dependent area. This catheter is subsequently used to irrigate the cavity with saline solution. Powdered sulfanilamide, 8 Gm. dissolved in 1000 c.c. of hot sterile water, or normal saline has been recommended by Adams and this sounds logical. With negative suction to draw the irrigation fluid out of the cavity, a continuous cleansing may be carried on which aids in earlier healing.

3. There is a saving in dressings and in length of hospital stay.

One objection to suction has been that the patient is necessarily confined to

bed, but this objection can be obviated if the connecting tubes are left long.

In using negative suction, it is important to make the tube, as it enters the chest, airtight. This can usually be done if the incision is closed snugly about the drainage tube in layers. A silk suture is passed on either side through the tube and chest wall to hold it in place. In addition, the tube is brought out through a tightly fitting sterile rubber sponge. When this is strapped to the chest without any intervening dressing, there is little likelihood of a leak occurring for approximately a week or ten days and during this time all the advantages of closed suction will, in all probability, have been accomplished.

There are various methods of securing negative suction. The one we have used most frequently has been by use of a water suction pump connected to the faucet, but an electrically driven suction pump is superior to this method. The least effective and the most troublesome one is by use of large bottles or demijohns connected in the same manner as a Wangensteen suction apparatus. It has the single advantage of practically always being available. An effort is made to maintain a negative suction of from 8 to 11 mm. of Hg. No ill effects from this amount of suction have been encountered.—J. E. STRODE, M.D., in *Surgery*, April, 1943.

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False Wassermann Tests

"Serologic technic has become so refined and so accurate that syphilis is again in danger of becoming a serologic reaction, rather than a disease. It is a wise laboratory that makes its reports only to a trained syphilologist, and not to the patient or general practitioner"—E. A. FENNEL, M.D. in April *Hawaii Medical Journal*.

One complaint that laboratory directors and pathologists make, is, that the general practitioner expects the laboratory to make a diagnosis of syphilis for him. The general physician is aggrieved because he is often consulted by patients with symptomless syphilis who present no diagnostic signs.

The laboratory cannot make a diagnosis. Conscientious workers in medical laboratories can only render aid in making a diagnosis. A false positive test, labeling with the wrong name, inaccurate or hurried procedures, failure to consider other causes (fever, blood stream infections) of positive tests, all can result in errors. Repeat the test, look for mucous patches in the mouth or on the penis or female genitalia, and ask about sore throat, persistent headaches, symptomless skin rashes and so on before accepting a slip of paper as more important than the patient.

The following diseases will give falsely positive Wassermann tests: 1. Malaria, 2. Mononucleosis, 3. Scarlet fever, 4. Vaccinia, 5. Subacute bacterial endocarditis, 6. Rocky Mountain spotted fever, lymphopathia venereum, yaws leprosy, and other rarer illnesses have also been reported, as well as hyperproteinemia. These infections may be ruled out by means of questioning, physical examination, blood smears and sedimentation rate to determine recent or intercurrent infection.—*Journal-Lancet*, July, 1943.

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The Male Climacteric

The Climacteric Syndrome

Order of Frequency of Symptoms in Thirty-Seven Male Patients

Symptoms	Per Cent
1. Nervousness, subjective	100.0
2. Potency decrease or loss	94.9
3. Depression	89.4
4. Decreased memory and concentration	86.5
5. Fatigability and lassitude	75.7
6. Loss of interest and confidence	70.0
7. Sleep disturbed	64.9
8. Irritability	59.4
9. Excitability	51.3
10. Fear of impending danger, ill at ease	51.3
11. Occipito-cervical aching	51.3
12. Numbness and tingling	51.3
13. Vertigo	48.6
14. Hot flushes	46.0

Testosterone propionate is effective in relieving these symptoms in the male just as estrogens are in relieving similar syndrome in the female.
—A. A. WERNER, M.D., in *J. Missouri M. A.*, Sept. 1943.

✦

Cold in Military and Industrial Surgery

In all phases of trauma associated with war, hypothermic anesthesia aids in control of hemorrhage, infection, progressive shock and pain and prepares for amputation if needed. Compound fractures associated with infection, severe burns of the extremities, crushing injuries of the soft tissues and the like in industrial accidents can be readily controlled by low temperatures.

Cancer and normal tissue have been kept under local cold as long as two months with no damage to normal tis-

sue. The physiologic principles involved in military and industrial accidents are always the same, namely, infection in large masses of damaged tissue with potential hemorrhage. Anoxia due to reduced tissue vitality is made unimportant owing to the lowered metabolism. The inflammatory reaction, with its subsequent hyperemia raising the metabolism and further embarrassing ischemic tissue, is controlled. Tissue can heal slowly under the influence of low temperatures, or it can be prepared for amputation with a minimum of shock or infection—M. K. NEWMAN, M.D., in *Arch. Physical Therapy*, July, 1943.

✦

Removal of Fish Hooks

The best method for removing a fish hook, in which the barb has gone under the skin, is by pushing it through, rather than by attempting to pull it out. If the barb would have to be pushed through considerable tissue before emerging, it might be best to inject novocaine solution and make a small incision down to the barb before pulling it out backward. *J.A.M.A.*, May 22, 1943.

✦

Occupational Therapy

Occupational therapy: Therapy by means of the patient's guided action directed toward improved function of mind and body (this includes rehabilitation therapy). GRAPH I indicates the various possibilities.

Let us take a simple example—an injured thumb. One of the patient's natural pliers is defective, his usual dexterity is gone, his pain is trying, and it takes more time and effort to do his work. Other factors complicate the picture: the fear of lasting incapacity and of loss of employment, the shortage of money for dependents, and interference with plans and commitments. Occupational therapy is of value here.—M. E. ORMSBY, M.R.C.S. in *Brit. J. Phys. Med.*, Mar.-Apr. 1943.

(Occupational therapy embraces the customary devices to bring back a patient's use of a member, such as the grasping of a tennis ball to strengthen the grip, following a fracture or infection of the hand. The mental side should not be overlooked—the patient who is "doing something" that he is interested in, is progressing and happy. Nature penalizes the inactive.—ED.)

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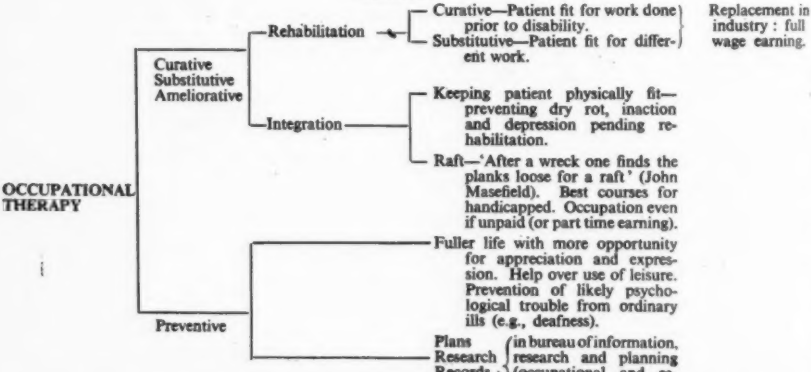
Patients Needing Occupational Therapy

Surgical:	Fracture, traumatic, temporary immobility or disability
Medical:	Heart disease, arthritis, rheumatism, tuberculosis
Neurologic:	Paralysis and paresis, nerve trauma, systemic disease (multiple sclerosis)
Ophthalmic:	Failing sight; temporary or partial blindness
Otologic:	Partial deafness
Dermatologic:	Disabilities (e.g. industrial dermatitis — fresh training)
	Disfigurement (e.g. lupus)
Psychologic:	Anxiety neuroses, functional cases
	Mentally deficient and abnormal patients

GRAPH I



Heat Sickness

Clinically, heat cramps are characterized by the sudden onset of excrutiating, intermittent cramps of skeletal muscles. Any of the muscles or groups of muscles of the trunk or extremities may be affected, although the extremities are more frequently involved. The rigidly contracted muscles are readily palpable for the duration of the pain which usually lasts from one-half to several minutes. Voluntary motion on the part of the subject or mild surface stimulation excite the affected muscles to further contractions. Characteristically, several regions of the body are involved either together or in an irregular sequence. Visceral cramps may occur in association with cramps in skeletal muscles and vomiting is frequently present in the severe case.

Heat Exhaustion

Heat exhaustion usually is slow in onset, but under unusual conditions of temperature, humidity and individual factors, it may develop rapidly. The symptoms and signs vary with the stage in the development of the condition in which the patient is seen. The clinical picture may be complicated by the concomitant occurrence of one of the other manifestations of heat sickness. Characteristically, however, the symptoms of the syndrome known as heat exhaustion are extreme weakness and a sense of impending collapse. The usual findings are profuse sweating, cool skin, rapid and somtimes irregular respirations, normal or slightly lowered body temperature, and normal or lowered blood pressure. Blood studies have revealed no significant changes. Some investigators believe there is a decrease in blood sugar, while others do not.

Heat Pyrexia

The most common symptoms of heat pyrexia are headache, vertigo, tinnitis, and frequency of urination; and the essential sign of the condition is some elevation of body temperature. Any or all of these are frequently in some degree associated with one of the other manifestations of heat sickness. The advanced case of heat pyrexia, however, usually occurs without associated cramps. The usual signs are a flushed face, hot, wet skin, labored breathing, accelerated pulse rate, normal or slightly elevated blood pressure, and elevation of temperature 1° to 4° above normal. There may be sudden maniacal actions, collapse and stupor. The very severe case may present dry and hot skin, temperatures from 3° to 10° above normal, fibrillary contractions of the muscles, and petechiae of the skin. It is the common experience of most people to feel the need of more rest during spells of hot weather. This fatigue is widespread in a working population during the hot months of the year, and expresses itself in a general letdown of mental and physical tone.

For several years heat sickness has been described as occurring in one of three forms: cramps, exhaustion, or pyrexia, each condition supposedly presenting a clear cut syndrome. In many instances heat sickness can be so classified but most heat cases present a picture far from uniform, frequently confusing and with physical findings most commonly varying in slight degrees from normal. It seems more practical to recognize that an individual subjected to a hot environment experiences stresses in all phases of his adaptive mechanism and that the point in the mechanism which fails to hold up determines the clinical picture the individual presents.

Treatment

The treatment of heat sickness should be directed at the portions of the adaptive mechanism which have failed. General measures benefit all cases—such as bed rest in a cool room, sponging of the body surface with tepid water, and 500 to 1000 cc. chilled normal saline by mouth. Sodium chloride solution is particularly important if muscle cramps are a feature of the attack. So far as is known *heat cramps subside only when plasma sodium chloride has been restored.* If the victim is vomiting, resort must be made to saline solution administered intravenously. Complete comfort is usually restored before a litre (1,000 cc.) has been injected. Some have had success in this type of case with enteric coated tablets of sodium chloride, 0.5 gm.

When severe exhaustion is the dominant feature of an attack, the patient must be treated for shock. Inhalation of oxygen and carbon dioxide has been suggested to relieve the associated anoxemia. Rest and saline solution by mouth are usually sufficient.

Mild degrees of pyrexia may be expected to respond to the general measures recommended. If the patient with an elevation of one or two degrees of body temperature does not return to normal within two or three hours, he should be hospitalized and the routine continued as long as is necessary. Patients with initial temperatures of 102° F. and over should be hospitalized at once. The high temperature may be reduced by spray-

ing the body surface with lukewarm or cool water, at the same time enhancing evaporation with air currents. Ice water is said to hinder cooling by causing a constriction of surface capillaries and to delay smooth, rapid fall of temperature. The cooling process should be discontinued at about 101° F. because of the likelihood of continued drop to dangerous, subnormal levels. Prolonged bed rest is indicated in severe cases.

Prophylaxis against heat sickness concerns three fundamental points. Persons exposed to high temperatures should take sufficient salt in their diets and at regular intervals between meals while they are exposed to hot environments. Diets should be well balanced, high in vitamins and adequate in protein and carbohydrate content.

Drinking water containing sodium chloride in the concentration of 0.1 per cent has been reported favorably. It has been observed, however, that heat sickness still occurs where salinized water was used by 3,000 steel workers. The cases usually are among men who have just returned from a few days layoff from work. The observations suggest the need of a more concentrated salt intake than that provided by the salinized water alone, or salt tablets for the first few days of a hot spell and for men returning to work after a layoff.—E. H. CARLETON, M.D. and A. G. KAMMER, M.D., in *Rocky Mt. Med. J.*, June, 1943.

Thiamin Chloride for the Mosquito Problem

Thiamin chloride in adequate dosage, administered either by mouth or by injection, is capable of reducing the mosquito hazard by diminishing or even eliminating the approach of the mosquito toward the protected individual, by lessening or entirely combating the itching that usually follows the bite and by minimizing and often preventing the formation of a papule at the site of the bite. Indeed it causes a rapid recession of welts even of long standing.

It is presumed that the large initial dosage brings about a rapid saturation of the tissues and that quick therapeutic results are dependent upon that fact. By prescribing the vitamin in doses of 40 mg. every four hours until relief it has been possible to arrive at the rough conclusion that from 80 to 120 mg. the first twenty-four hours will produce satisfactory results in almost every person before the second day arrives. W. R. SHANNON, M.D., in *Minn. Med.*, Sept., 1943.

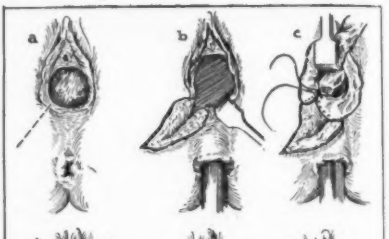


Fig. 1. Technic of Episiotomy and Repair. a. Episiotomy is made to the right, so that it will be easier for the right handed physician to suture. b. A rounded tube (as a large size test tube) is inserted well into the rectum, so that one can avoid placing the deep sutures in the rectal wall. c. Placing the first suture in the vaginal mucosa. d. Suturing the deeper layers of the wound. e. Removal of tube and suturing of superficial layers. f. Intracutaneous suture with end of first suture.

Episiotomy Repair

(See Fig. 1)

The episiotomy wound is closed by taking first a deep, encircling bite in the upper, vaginal end of the wound with a half-length No. 0 or 1 chromic cat-gut suture on a round, curved needle. After it has been tied, it is carried outward to the hymenal ring as a continuous suture. Longer intervals are left between bites on the relaxed medial edge of the mucosal wound than on the contracted lateral edge to insure symmetrical approximation. This suture is left long and is laid aside to be used later for skin closure.

Interrupted sutures are placed and tied in the severed portions of the levator ani muscle and the more superficial tissues.

The superficial fascia beneath the skin is closed with a continuous suture which is the same one used to unite the mucosal edges of the vaginal portion of the wound.

The remaining end of the suture is threaded on a fine, curved, cutting needle and is carried upward subcutaneously to the hymenal ring where one through-and-through stitch is taken and tied to complete the repair.—*Minn. Med.*, June, 1943.

Office Gynecological Practices*

1. Have the patient urinate before performing vaginal or rectal examination.

2. Every gynecologic patient should have a urinalysis, either by cleansing the genitalia, plugging the vaginal opening with dry cotton and then urinating in a clean receptacle, or by catheterization after cleansing the urethal meatus.

3. *Levator ani test:* With the patient in position for vaginal examination, place one or two fingers on the posterior wall of the vagina with the palm downward. The patient is then told to squeeze the finger or pull in, while the examiner taps the buttocks with the thumb to indicate were the pull is to be exerted. A voluntary contraction of the levator is accompanied by an elevation of the patient's chest. The contracted levator ani muscle can then be palpated in its entirety by the finger in the vagina. This reveals gross or even minor injuries suffered at delivery or poor episiotomy reconstruction.

4. The *sedimentation rate* is a more delicate and reliable index of the presence of infection and the prognosis of a seriously sick patient than is the white blood count.

5. Every gynecologic patient should have the breasts examined, to detect early cancer or pre-cancerous changes.

6. A drop of any discharge should be diluted with saline solution and studied under the microscope. Trichomonas vaginalis is readily seen moving about, and monilia can be seen as budding forms.

7. If monilia are found, the careful painting of the entire vagina with 1 percent gentian violet solution will cure.

8. *Nonspecific vaginitis* and *senile vaginitis* should be treated by painting of the entire vagina with 2 percent mercurochrome solution. Injections of estrogenic hormone should also be given to patients with senile vaginitis.

9. *Pruritis vulvae* is frequently of diabetic origin. Sugar may not be present in the urine but a blood sugar study will show the diabetic tendency. If such tendency is not present, the patient should be given 10 to 50,000 units of estrogen hypodermically, and told to apply an anti-pruritic ointment locally.

Vaginal Bleeding

10. Urethral caruncle causes bleeding. Treatment: Local anaesthesia and cauterization.

11. Cervicitis or cervical erosion may cause bleeding; cauterization of the cervix is indicated.

12. Bleeding from vaginitis ceases when the vaginitis is controlled.

Cervical Cauterization

13. Superficial cauterization is of little value. A dry, black eschar should be formed over the entire area exposed to erosion, and the cervical canal should be cauterized in 2 to 4 long longitudinal strokes. A mercurochrome tampon is then placed against the cervix; this is repeated once weekly. Intercourse and douches are forbidden for 4 weeks until healing takes place. Deodorant powder is placed on vulvar pads to destroy odor of discharge.

14. Thyroid therapy is often of value in gynecologic practice; this cannot be said of pituitary preparations.

Gynecologic Backache

15. Backache is due to (1) cervicitis with posterior extension of the inflammation into the uteroscaral ligaments (diagnosed by tenderness on examination posteriorly and pain on moving cervix anteriorly; treated by cauterization of the cervix), (2) retroversion of a heavy uterus with passive congestion (if relief follows placing of the uterus in proper position, surgical repair of the retroversion will give permanent relief), (3) chronic adnexal disease and (4) advanced cervical carcinoma.

Bladder Symptoms

16. The urethra should be studied by passing a urethral sound. If a *stricture* exists, it should be treated by dilatations with urethral sounds. *Relief of "cystitis" symptoms* is a common result.

17. *Trigonitis* is common in the presence of cystolcele. Urinary findings are negative. The base of the bladder can be palpated through the anterior vaginal wall, and pain results instead of the usual sensation of urge to urinate. Treatment: ¼ to 1 per cent mercurochrome solution instillations are effective.

J. L. Baer, M.D.
Michael Reese Hospital, Chicago.

Med. Clin. N. Am., June 1943.

Life-Saving Bronchoscopy for Asthma

In the occasional, severe status asthmaticus which becomes progressively worse, despite adrenalin, aminophyllin and oxygen, bronchoscopy with suction of large amounts of tenacious, mucopus which block the bronchial tubes, will result in immediate improvement. Autopsies on a number of fatal cases of status asthmaticus indicate that the cause of death usually is obstruction of the trachea and bronchi by excessive, sticky secretion.—L. Bases, M. D. in *J. Missouri M. A.*, June, 1943.

DIAGNOSTIC POINTERS

Pounding Heart

• A heart that is very motile, resembling that of hyperthyroidism, may be a sign of thiamin (vitamin B_1) deficiency. Myocardial damage is common in "occidental beriberi," especially in alcoholics, drug addicts and faddists, after prolonged use of some diets deficient in thiamin, or in patients who consume large quantities of sweets and other carbohydrates without an adequate supply of B_1.

The thiamin deficient heart also exhibits (1) collapsible pulse, (2) low diastolic blood pressure, (3) a sound in the peripheral vessels resembling that in aortic insufficiency and hyperthyroidism. A short conduction time (0.10 to 0.11) is observed in the electrocardiogram, as compared to the normal of 0.12 to 0.20. —D. SCHERF, M.D., in *Rev. Gastroent.*, Jan., 1944.

Poliomyelitis vs. Neuronitis

• Anyone who has had massive paralysis for a few weeks and then completely recovers did *not* have anterior poliomyelitis.—E. TOOMEY, M.D.

Urologic Examination in Hypertension

• All patients with hypertension should be examined urologically, early in the course of the disease, to determine whether or not the source of the elevated pressure is in the urinary tract. Children can develop hypertension with as severe symptoms and as rapidly a fatal termination as adults. Urological examination is easily performed on them.—W. J. MCMARTIN, M.D. in *J. Ark. Med. Soc.*, Jan. 1943.

First Symptoms of Colonic Cancer

• In a review of 40 cases of proven carcinoma of the colon, 85% first complained of *abdominal pain* or intermittent *colic* associated with constipation and *relieved by the passage of gas* or defecation not accompanied by any obvious change in stools.—W. L. ESTES, Jr., M. D., in *Penn. M. J.*, August 1943.

Brucellosis—An Obscure Disease

• Brucellosis (undulant fever) should be considered as a possible cause of any obscure disease, whether acute or chronic. Pulmonary tuberculosis may be confused clinically, and occasionally, radiologically. Brucellosis may involve the joints, causing arthritis, or the joints, resulting in osteomyelitis. Neurosis is the most frequent erroneous diagnosis in patients who are afebrile or have low grade fever, and fatigue, loss of weight, joint and muscle pains, headache, mental confusion and backache. *Tests:* Skin test (intradermal test), blood serum agglutination test, phargocytic index and culture of the blood, urine, feces or exudates.—H. J. HARRIS, M.D., in *Bull. N. Y. Acad. Med.*, Nov. 1943

"Cold" vs. Malaria

• The onset of malaria may cause the symptoms of a cold or acute upper respiratory infection.—H. MOST, M.D. in *J.A.M.A.*, Jan. 8, 1944.

Simple Clinical Sign of Shock

• The increased time required for a blanched area to become pink shows that the peripheral circulation is declining and that shock is approaching. The light pressure of the finger on the skin of the forehead provides a blanched area which can be studied to see how long it takes to fill in.—H. K. BEECHER, M.D., in *Ann. Surg.*, June 1943

Morning Gastric Symptoms

• Minor attacks of morning nausea and gastric upsets suggest chronic alcoholism and cirrhosis of the liver.—R. MCCOMBS, M.D., in *Internal Medicine in General Practice* (W. B. Saunders Co.).

Diagnosis of Diabetes

• A normal fasting blood sugar examination does not rule out diabetes. A blood sugar test taken 2½ hours after meals is more valuable for diagnostic purposes, and will confirm many positive diagnoses which are missed by the fasting blood sugar. Glucose tolerance studies are valuable in differentiating diabetic and nondiabetic glycosuria. *Glycosuria is merely a sign, not a diagnosis.*—HENRY J. JOHN, M.D., in *South. Med. J.*, Sept. 1943

THUMBNAIL THERAPEUTICS

Swimmer's Itch

• Itching, following swimming, is often due to schistome dermatitis, caused by the cercaria stagnicolae. The parasites enter the skin only, and produce no systemic effect.

Symptoms: Immediately after the cercariae penetrate the skin, a tingling sensation is experienced and a pin-point redness appears. Marked itching follows in serveral hours, and the macule becomes papular. The itching disappears in a few days but the rash may require two weeks before fading.

Treatment: The most effective method of prevention is thorough rubbing of the skin with a dry towel immediately after leaving the water. The tiny larvel schistosomes are crushed and removed before they can penetrate. Calamine lotion or ointment with 1 percent phenol will control the itching.—A. J. QUICK, M.D., in *Wis. Med. J.*, July 1943

Stilbestrol for Dysmenorrhea

• Stilbestrol, in vaginal suppository form, may be used in the treatment of dysmenorrhea. Dosage: A 0.2 to 0.5 mg. suppository is inserted into the vagina daily during the intermenstrual period. —R. B. GREENBLATT, M.D. (Augusta, Ga.), in *J.A.M.A.*, April 3, 1943.

Flatus and Colostomy Deodorant

• Activated carbon 90 percent, plus phenylsalicylate 10 percent in enteric-coated capsules*, given two or three times daily, results in deodorization of flatus and removel of a major objection to colostomy. Patients with flatulance are relieved of much embarrassment because any gas that is passed is odorless. — W. C. CARROLL, M.D., in *Minne. Med.*, Aug. 1943

*(Devised by Dr. W. J. Tomsicek, Chief of Chemistry Department, St. Thomas College, Minneapolis, Minnesota.—ED.)

Pruritis Ani

• Pruritis ani due to mycotic infection should be treated by daily applications of mercuric bichloride solution, 1:3,000. —*Dover Clinic Review*, Dec. 1943

Prevention of Heat Cramps

• Large amounts of vitamin C are lost through sweating. Since vitamin C is concerned with the tone of large muscles, as well as the muscular coats of blood vessels, collapse of the circulation may follow. Salt and vitamins B and C, when given to men working under conditions of extreme heat, seem to prevent heat cramps.—*Penn. Med. J.*, June 1943

Pre-Operative Morphine

• When a patient is not well relaxed after preliminary medication, a small dose of morphine may be given slowly, intravenously. The effect will be obtained within a very few minutes and the operation may proceed at once.—J. S. LUNDY, M.D. in *Proc. Mayo Clin.*, May 5, 1943.

Sulfaguanidine for Bacillary Dysentery

• Acute bacillary dysentery responds rapidly to sulfaguanidine. A few cases of drug fever will develop; the fever disappears rapidly after the drug is discontinued. Occasionally, sulfadiazine is needed to remove all bacteria from stools.—S. G. PAGE, M.D., in *Va. Med. M.*, Nov. 1943

Treatment of Urticaria

• One-half of the persons with urticaria (hives) are sensitive to coal tar products and can be cured by stopping the use of sedatives, analgesics, laxatives, flavors and colors of certain types for two weeks. All of us eat some of these products daily.—M. B. COHEN, M.D., in *Ohio S. Med. J.*, Dec. 1943

Epidemic Keratoconjunctivitis (Shipyard Fever)

• The most favorable results to date have followed local use of tyrothricin 30 mg. per hundred cubic centimeters four to six times daily. Few favorable results have followed the use of zinc ointment containing sulfathiazole 3.0 per cent and other sulfonamide compounds in combination with other drugs. Convalescent serum has not been consistently useful.—PARKER HEATH, M. D., in *J.A.M.A.*, Jan. 15, 1944

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

Buy good books and read them; the best books are the commonest, and the latest editions are always the best.—LORD CHESTERFIELD

OFFICE TREATMENT OF THE NOSE, THROAT AND EAR

Hollender

OFFICE TREATMENT OF THE NOSE, THROAT AND EAR. *By Abraham R. Hollender, M. Sc., M.D., F.A.C.S., Chicago, Illinois: The Year Book Publishers (304 South Dearborn Street). 1943. Price, $5.00.*

This is a well balanced presentation of treatment that may be carried on in the office. Assembled in brief, to the point, instructions are given details for the care of sinusitis, nasal bleeding, wax in the ears and the other common conditions.

For the general practitioner and specialist who is interested in general management (glandular, nutritional, immunization, pharmacotherapy) the author provides a well balanced survey of current methods.

Detailed otolaryngologic technic is furnished for those conditions requiring special training and equipment, as well as those which may be done by any practitioner.

All procedures are illustrated by well done medical sketches (by Miss Victoria Catalani who has drawn many of *Clinical Medicine's* illustrations).

The author's work with physical therapy is well known. He brings out the many phases of physiotherapy which are applicable to otolaryngologic practice.

The book is divided into two sections: Section one deals with a general survey of office treatment of nose, throat and ear diseases, office surgery, radiotherapy, physical therapeutic procedures, pharmacotherapy, nutritional management, endocrinotherapy, immunization; Section two takes up diseases of the nose, mouth, sinuses, pharynx, larynx, ear and nervous disorders. Each disorder is taken up in turn and various methods of treatment given.

The book is complete, immensely practical and usable.

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PAPERS OF THE MAYO CLINIC

Hewitt

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. *Edited by Richard M. Hewitt, B.A., M.D., M.D., and associates. Volume 34: 1942, published July 1943. Philadelphia and London: W. B. Saunders Company. 1943. Price $11.00.*

Despite the war, this year's volume of Mayo Clinic articles, which have been published previously in many journals, is large and extremely interesting.

Every phase of medicine, surgery and many of the specialties provide articles which are usually brief and contain much information.

Almost worth the price of the book is Barnes (cardiology) "A Logical Approach to the Diagnosis of Heart Disease" with its summing up of *important* information relating to cardiac diagnosis in five pages.

Lundy (anesthesia), as usual, presents new technics in anesthesia. The use of combined light intravenous anesthesia with spinal anesthesia, as advocated by Bailey for the last four years, is described and cautions given.

Helmholz (Pediatrics) summarizes urinary antiseptics, indications and their use at the present time.

Recent advances in chemotherapy are covered in a whole section of 157 pages, including use of the sulfonamides of various types, dicoumarin, promin for tuberculosis, reappraisal of methenamine, penicillin, etc.

The alimentary tract section present many papers on common anorectal problems, medical and surgical treatment of stomach and intestinal conditions and differential diagnosis.

Radiologists will be interested in the paper on persons whose skins and subcutaneous tissues were very susceptible to roentgen rays. Physiotherapy in medical practice, and in home care of arthritis is well presented.

And so it goes, through the whole range of practice. For one who does not keep close watch of the literature, such a book should be studied well.

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THE MARCH OF MEDICINE

THE MARCH OF MEDICINE: Number VIII of the New York Academy of Medicine, Lectures to the Laity, 1943. *New York: Columbia University Press, Morningside Heights, New York. Published Dec. 31, 1943. Price $2.00.*

These lectures are delivered by men who know their individual fields so well that they can overlook their narrow boundaries and describe the significance of this knowledge and how it may be used. Although designed for intelligent laymen, they make good reading for the physician who tends to forget the relationship between such specialized knowledge and its application.

In "Let Babies Be Our Teachers" (by Myrtle B. McGraw) these arresting sentences are found: "The serious observer will learn that progress and development (of a baby) do not move in a straight line . . . There are losses . . . Of course, every mother dealing with the practical affairs of bringing up children knows this . . . But it has not been emphasized in our theoretical concept of development and learning . . . these periods of regression are not always accepted with equanimity. This is especially so when the performance is one which we desire to cultivate in our children. How often does a mother complain that her child was 'beautifully trained' but that he has backslidden, and she's worried lest the fault is hers. If both the mother and the pediatrician could recognize that regressions are a natural process of growth; they would not aggravate this phase of anxiety."

She further comments that no time need be set to teach the baby to do certain things, as "when an infant is just becoming able to do some act, he shows an indomitable urge to exercise it."

Franz Alexander discusses aggressiveness, both individual and collective. This is especially interesting in comparing the dependence of citizens of totalitarian states and the independence and aggressiveness of democratic citizens.

"War and Medicine" by Edgar Erskine Hume discusses the advances that have been made in medicine as a result of war. From back in the days of the first physicians, war has been a school for surgeons.

Bernard Glueck has an essay on Crime and Punishment, Sir Norman Angell on The Scientific Method and Our Plans for Peace, Robert R. Williams on Nature and Man.